

## Letter to the Editor

### Endovascular treatment of acute traumatic aortic rupture: radical solution or postponement of the problem?<sup>☆</sup>

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Endovascular stent-grafting of the traumatic thoracic aortic rupture constitutes an alternative treatment option to conventional surgical repair. The advantages of endovascular treatment over conventional surgical repair include the avoidance of thoracotomy (in the majority of patients), cardiopulmonary bypass and related complications (SIRS, ARDS), systemic heparinization complications, ischemia of spinal cord during aortic cross-clamping, and finally distal arterial ischemia [1]. While, endovascular treatment seems to have an advantage over conventional surgical repair concerning early results, this technique has in our opinion, two major drawbacks: (A) its superiority concerning early results is not as significant as reported, and (B) its late results still remain unknown and may be underestimated. In fact, reading this excellent study [1] and several others [2,3] we could note the following: (A1) Although the mortality is higher in the surgical group in comparison to the stenting group (21.2% vs 7.7%), this difference is not statistically significant. (A2) Concerning the incidence of paraplegia there were no statistically significant differences between two groups. In addition, the reported two cases of paraplegia were not related to the surgical procedure itself. (A3) The accidental occlusion of left subclavian artery, reported in a high percentage (51%) of stented patients, constitutes a serious complication, especially for young patients such as those in this study (average age = 36 years) [1]. However, it should be noted the fact that the majority of patients were young, consequently this complication becomes much more meaningful as it is related to the future professional return, and the potential use of IMA. Indeed, 25% of the patients with the above complication had ischemic complications of the arm and underwent re-operation with low heparinization. Moreover, it would be interesting for us to have clarification if the two patients with the late neurological problem belong to the subgroup with the accidental occlusion of the LSA. (A4) Conversion to conventional surgery was needed in three cases.

(B1) The mean follow-up time was significantly shorter in the endovascular stent-graft group compared to surgical group: 2.2 years vs 6 years, a fact that will no doubt influence positively the late results of the endovascular stent-graft technique. (B2) The quality of the follow-up was greatly different in the two groups: only 25% of patients belonged to endovascular stent-graft group evaluated with CT-scan. As a consequence, further complications of this group may not have been reported. The reported two deaths in following 18 months due to late sequelae or severe cerebrospinal trauma

might be related to the stent technique. In conclusion, endovascular stent technique in unstable patients with polytrauma and simultaneous craniocerebral trauma attenuates the surgeon's stress as it offers a temporary solution to a difficult situation, rendering the surgeon a winner according to Marty [4]. However, this technique in a great number of patients may simply postpone the problem (possibly with different clinical appearance) to the future. A more reliable and also longer follow-up is needed in order to clarify if the endovascular stenting is the real winner.

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<sup>☆</sup> The authors of the original paper [1] were also invited to reply to this Letter to the Editor but they did not respond.

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## Reply to the Letter to the Editor

### Reply to Apostolakis et al.

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**Keywords:** Traumatic aortic rupture; Endovascular; Stent graft

In the letter 'Endovascular treatment of acute traumatic aortic rupture: radical solution or postponement of the problem?' Apostolakis et al. raise the question about the superiority of the endovascular approach and its durability [1]. Such discussion is to be encouraged when another method, and especially one as revolutionary as endovascular, is looking to replace a well established open surgical treatment that has itself continuously improved for half a century. However, the essence of the endovascular repair of traumatic aortic rupture is about emergency management of a life threatening injury in a severely traumatized patient including a minimal (additional) trauma load by the operation. Specifically, the medium- and long-term issues related to the endovascular repair

may be managed out of the context of the trauma once the patient has recovered.

To date numerous studies including a recent review in 2007 [2] show a trend towards an improved outcome following endovascular repair of traumatic aortic rupture with a reduced procedure related mortality of 2% and overall mortality of 6%. These results compare favorably to open repair with an overall mortality of 12–26% and a 2–5% risk of paraplegia inherent to the open technique. Pragmatism speaks clearly in favor of the endovascular treatment. It is ethically almost impossible to perform prospective randomized trials. Nevertheless, there are also important risks associated with the endovascular procedure, and the most important one being the risk of a stroke resulting from cerebral embolization. Others problems such as claudication of the left arm can wait to be resolved later.

Although long-term results (five years and more) of the endovascular repair are not yet known and may hamper the enthusiasm of endovascular, late complications such as re-expansion of the pseudoaneurysm due to endoleak, or pseudocoarctation as a consequence of device collapse, can be detected by a close follow-up and addressed electively. Life threatening long-term complications such as aorto-esophageal fistulas due to graft infection are rare and may happen in the context of open repair as well. We believe in endovascular as the overall winner for repair of traumatic aortic rupture.

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## Letter to the Editor

### Medical, angioplasty or surgery for stable coronary artery disease; do we have an answer !!!

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The results of the 5-year follow-up of the MASS trial by Lopes et al. [1] describing the 'impact of number of diseased vessels on clinical outcome' was well written and read with

great interest. It has again added fuel to the existing debate of coronary artery bypass grafting (CABG) versus percutaneous intervention (PCI) with stenting versus medical management in stable coronary artery disease and brings out some important points for discussion.

1. It is interesting to note that none of the randomized controlled trials comparing CABG versus PCI with stent in multivessel disease including the present one, have found a superior advantage of CABG in survival over 5 years [2,3]. Therefore it would be important to know if there were any significant increases in 'revascularization procedures' in the PCI with stent versus CABG arm stratified by the number of vessel disease. The authors have provided data comparing each treatment arm with vessel involvement and comparing composite endpoints of mortality, MI or refractory angina requiring revascularization but not specifically for revascularization in the same subgroup. [SVD – 10.7% with PCI vs 8.8% with CABG, 2VD – 14% revascularization with PCI vs 7.5% in CABG, 3VD – 9.5% with PCI vs 8.9% with CABG, were these significant?]. This would be important as increased revascularization if observed in the PCI arm versus CABG for a specific group (3VD or 2VD), would mean increased health costs at same survival benefits.
2. For reasons above and others it would be more informative if the patient characteristics assigned to treatment by CABG, PCI or medical had been provided for each group. This would help to rule out selection bias.
3. There was no increase in myocardial infarction (MI) in the 3VD group and the patients were significantly older. The cause of death in these patients was probably due to comorbid conditions and would be worth mentioning as it would help us to target treatment towards these factors in the face of better revascularization outcomes.
4. The extent of aggressive lipid management in the medically treatment group too is unclear. The COURAGE [4] trial showed no benefit of PCI with aggressive medical management over aggressive lipid management alone. The LDL levels achieved in the medically treated patients would help us compare the benefits of this treatment line compared to CABG or PCI.
5. We would like to point out an error in the units used for cholesterol levels in these patients. They have been mentioned as mmol/l but should be mg/dl.

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